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10/590,224	04/02/2007	Carlo Baldovino	33033-1083	6962

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EXAMINER

REESE, ROBERT T

ART UNIT	PAPER NUMBER
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3657

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,224	Applicant(s) BALDOVINO ET AL.	
	Examiner ROBERT T. REESE	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed May 26, 2009, has been entered. Claims 1 and 16 have been amended, and claims 32-36 have been added. Therefore, claims 1-36 are now pending in the application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 34 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 34 recites "the toothed belt is characterized in that said toothed belt is suitable to pass motor vehicle duration tests." The claim does not identify what those tests are or the conditions under which the tests are conducted, such as duration, rotation rate, temperature, load, or other environmental conditions. The claim also fails to identify what is meant by "suitable", regarding what property of the belt achieves this suitability. Claim 35 recites "that said toothed belt is suitable to resist at least 80,000,000 cycles in motor vehicle duration tests" again without specifying the test conditions or what properties constitute "suitability". The lack of these limitations in the recited claims renders them indistinct with regard to the invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 10, 12, 15, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meco et al. (2002/0015825) in view of Achten (7,396,884).

As per claim 1, Meco et al. discloses: Toothed belt (1) for use in contact with oil and comprising a body (2) and a number of teeth (4) extending from at least one first surface of said body; said teeth being coated by a first fabric (5), said fabric being externally coated with a resistant layer (8), in which: said resistant layer comprises a fluorinated plastomer, a first elastomeric material and a vulcanization agent (Paragraph 11); said fluorinated plastomer is present in said resistant layer in a larger quantity than said first elastomeric material (Paragraph 11); aid body comprises a compound based on a second elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups (HBNR, identified in the abstract).

However, Meco et al. does not disclose: said nitrile groups are in percentage between 33% and 49% in weight with respect to the weight of said copolymer or that said toothed belt is adapted to operate in direct contact with oil or partially submerged in oil.

Achten discloses Hydrogenated Nitrile Butadiene Rubber (HBNR) with a nitrile percentage of 10% to 50% (Column 2, lines 17-19) and that the HBNR composites have good resistance to heat and oil (Column 4, lines 51-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt of Meco et al. to use the HBNR of Achten to ensure adhesion of the resistant inserts in the belts with good resistance to heat and oil.

As per claim 2, Achten teaches said nitrile percentage of 39% (Column 2, lines 17-19).

As per claim 3, Meco et al. discloses: characterized in that said second elastomeric material comprises hydrogenated butadiene acrylonitrile (Paragraph 19).

As per claim 4, Meco et al. discloses: said hydrogenated butadiene acrylonitrile is modified with a zinc salt of polymethacrylic acid (paragraph 33).

As per claim 5, Meco et al. discloses: said resistant layer comprises said fluorinated plastomer in a quantity in weight of between 101 and 150 parts in weight with respect to said elastomeric material (paragraph 31).

As per claim 6, Meco et al. discloses: said fluorinated plastomer is polytetrafluoroethylene (paragraph 33 and abstract).

As per claim 10, Mecos et al. discloses: said elastomeric material comprises fibers (paragraph 19).

As per claim 12, Mecos et al. discloses: resistant inserts (3) chosen from the group consisting of aramid fibers, PBO and carbon fibers (paragraph 22).

As per claim 15, Mecos et al. discloses: the teeth (4) are treated with a polymer resistant to expansion (This is construed as an inherent property of the coating).

As per claim 32, Mecos et al. discloses: A toothed belt (1) comprising a body (2) and a number of teeth (4) extending from at least one first surface of said body; said teeth being coated by a first fabric (5), said fabric being externally coated with a resistant layer (8), in which: said resistant layer comprises a fluorinated elastomer, a first elastomeric material and a vulcanization agent (Paragraph 11); said fluorinated elastomer is present in said resistant layer in a larger quantity than said first elastomeric material (Paragraph 11); said body comprises a compound based on a second elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups; said nitrile groups (HBNR, identified in the abstract).

As per claim 32, Achten teaches Hydrogenated Nitrile Butadiene Rubber (HBNR) with a nitrile percentage of 10% to 50% (Column 2, lines 17-19) and that the HBNR composites have good resistance to heat and oil (Column 4, lines 51-60).

As per claim 33, Achten teaches that the toothed belt is characterized in that it maintains its resistance to oil for the course of its lifetime when used in direct contact with oil or partially immersed in oil (Column 4, lines 51-60. It is construed that this limitation would be covered by the composites having good resistance to heat and oil.).

As per claim 34, Achten teaches that said toothed belt is suitable to pass motor vehicle duration tests (It is construed that a belt made using Achten's HBNR would be designed to pass required motor vehicle duration tests.).

As per claim 35, Achten teaches that said toothed belt is characterized in that said toothed belt is suitable to resist at least 80,000,000 cycles in motor vehicle duration tests (It is construed that a belt made using Achten's HBNR would be designed to required motor vehicle duration tests, and that the requirement of 80,000,000 cycles would be a component of this testing).

As per claim 36, Mecro et al. discloses: A toothed belt (1) comprising: a body (2), a number of teeth (4) extending from at least one first surface of said body, said teeth being coated by a first fabric (5); said fabric being externally coated with a treatment composition comprising a fluorinated elastomer (Paragraph 11).

As per claim 36, Achten teaches the toothed belt is adapted to operate in direct contact with oil or partially immersed in oil (Column 4, lines 51-60).

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mecro et al. (2002/0015825) in view of Achten (7,396,884) and further in view of Osaka et al. (7,056,249).

As per claim 7, the combination of Mecro et al. and Achten disclose all of the structural elements of claim 1 above.

However, the combination of Mecro et al. and Achten does not disclose: that the back of said belt is coated by a second fabric.

Osaka et al. teaches a power transmission belt that has the back of said belt is coated by a second fabric (56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt of the combination of Meco et al. and Achten with the back fabric of Osaka et al. to provide additional protection to the belt from environmental elements in the car engine, particularly oil, to extend the life of the belt.

As per claims 8 and 9, Osaka et al. teaches: (claim 8) that the second fabric is coated on the outside by a second resistant layer (column 4, lines 60-61 and (claim 9) the second resistant layer is equal to said first resistant layer (column 4, lines 60-61). (It is construed that the statement that the back side cloth layer may have the same construction as the cover layer over the teeth includes the resistant layer.)

7. Claims 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meco et al. (2002/0015825) in view of Achten (7,396,884) and further in view of Knutson (6,945,891).

As per claim 11, 13, and 14, the combination of Meco et al. and Achten disclose all of the structural elements of claim 1 above.

However, the combination of Meco et al. and Achten does not explicitly disclose: (claim 11) said fibers are present in a quantity in weight of between 0.5 and 15% with respect to said elastomeric material, (claim 13) said restraint inserts have been treated with an RFL comprising an oil-resistant latex, and (claim 14) said latex comprises an

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elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups.

Knutson teaches a power transmission belt that has (claim 11) fiber-loading level from 0.5 to 20 phr (column 4, lines 23-25), (claim 13) said restraint inserts (18) have been treated with an RFL comprising an oil-resistant latex (column 6, lines 8-44), and (claim 14) said latex comprises an elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups (column 6, lines 45-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt of the combination of Mecos et al. and Achten with the fiber content, restraint insert treatment of RFL and latex, and the latex composition as taught by Knutson to ensure adhesion of the restraint elements in the belt.

8. Claims 16-21, 25, 27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mecos et al. (2002/0015825) in view of Achten (7,396,884) and further in view of Ullein et al. (5,967,922).

As per claim 16, Mecos et al. discloses: (from Mecos et al.) A toothed belt (1) comprising a body (2) and a number of teeth (4) extending from at least one first surface of said body; said teeth being coated by a first fabric (5), said fabric being externally coated with a resistant layer (8), in which: said resistant layer comprises a fluorinated elastomer, a first elastomeric material and a vulcanization agent (Paragraph 11); said fluorinated elastomer is present in said resistant layer in a larger quantity than said first

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elastomeric material (Paragraph 11); aid body comprises a compound based on a second elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups (HBNR, identified in the abstract).

Achten teaches Hydrogenated Nitrile Butadiene Rubber (HBNR) with a nitrile percentage of 10% to 50% (Column 2, lines 17-19), and the toothed belt maintaining use in an oil-wet condition (Column 4, lines 51-60).

However, the combination of Mecco et al. and Achten does not explicitly disclose: a timing control system for a motor vehicle comprising at least one drive pulley, and one driven pulley.

Ullein et al. teaches a tensioning device comprising at least one drive pulley (5), and one driven pulley (7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt disclosed by the combination of Mecco et al. and Achten with the drive and driven pulleys taught by Ullein et al. to provide a tensioning device for a control gear in an automobile.

As per claim 17, Achten teaches said nitrile percentage of 39% (Column 2, lines 17-19).

As per claim 18, Mecco et al. discloses: characterized in that said second elastomeric material comprises hydrogenated butadiene acrylonitrile (Paragraph 19).

As per claim 19, Mecco et al. discloses: said hydrogenated butadiene acrylonitrile is modified with a zinc salt of polymethacrylic acid (paragraph 33).

As per claim 20, Meco et al. discloses: said resistant layer comprises said fluorinated elastomer in a quantity in weight of between 101 and 150 parts in weight with respect to said elastomeric material (paragraph 31).

As per claim 21, Meco et al. discloses: said fluorinated elastomer is polytetrafluoroethylene (paragraph 33 and abstract).

As per claim 25, Meco et al. discloses: said elastomeric material comprises fibers (paragraph 19).

As per claim 27, Meco et al. discloses: resistant inserts (3) chosen from the group consisting of aramid fibers, PBO and carbon fibers (paragraph 22).

As per claim 30, Meco et al. discloses: the teeth (4) are treated with a polymer resistant to expansion (This is construed as an inherent property of the coating).

As per claim 31, Ullein et al. et al. teaches: a sliding block (17 or 18).

9. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meco et al. (2002/0015825) in view of Achten (7,396,884) and Ullein et al. (5,967,922) and further in view of Osaka et al. (7,506,249).

As per claim 22, the combination of Meco et al., Achten and Ullein et al. disclose all of the structural elements of claim 16 above.

However, the combination of Meco et al., Achten and Ullein et al. does not disclose: that the back of said belt is coated by a second fabric.

Osaka et al. teaches a power transmission belt that has the back of said belt is coated by a second fabric (56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt of the combination of Meco et al., Achten and Ullein et al. with the back fabric of Osaka et al. to provide additional protection to the belt from environmental elements in the car engine, particularly oil, to extend the life of the belt.

As per claims 23 and 24, Osaka et al. teaches: (claim 23) that the second fabric is coated on the outside by a second resistant layer (column 4, lines 60-61 and (claim 24) the second resistant layer is equal to said first resistant layer (column 4, lines 60-61). (It is construed that the statement that the back side cloth layer may have the same construction as the cover layer over the teeth includes the resistant layer.)

10. Claims 26, 28, and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Meco et al. (2002/0015825) in view of Achten (7,396,884) and Ullein et al. (5,967,922) and further in view of Knutson (6,945,891).

As per claim 26, 28, and 29, the combination of Meco et al., Achten, and Ullein et al. disclose all of the structural elements of claim 16 above.

However, the combination of Meco et al., Achten, and Ullein et al. does not explicitly disclose: (claim 26) said fibers are present in a quantity in weight of between 0.5 and 15% with respect to said elastomeric material, (claim 28) said restraint inserts have been treated with an RFL comprising an oil-resistant latex, and (claim 29) said latex comprises an elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups.

Knutson teaches a power transmission belt that has (claim 26) fiber-loading level from 0.5 to 20 phr (column 4, lines 23-25), (claim 28) said restraint inserts (18) have been treated with an RFL comprising an oil-resistant latex (column 6, lines 8-44), and (claim 29) said latex comprises an elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups (column 6, lines 45-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the toothed belt of the combination of Mecos et al., Achten, and Ullein et al. with the fiber content, restraint insert treatment of RFL and latex, and the latex composition as taught by Knutson to ensure adhesion of the restraint elements in the belt.

Response to Arguments

11. Applicant's arguments filed May 26, 2009, have been fully considered but they are not persuasive. See rejections of claims 1 and 16 above. The Applicant has also brought up the question of the use of Achten's HBNR in the oil soaked environment of the automobile engine. As stated above, Achten discloses that composites made from his HBNR are suitable for use in V-belts (Column 4, lines 46-50), and that these composites have good resistance to heat and oil ((Column 4, lines 51-60). The range of nitrile groups in HBNR rubber composites is identified as 10% to 50% (Column 2, lines 17-19). This brackets the recited range in claims 1 and 16 of 33% to 49%.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT T. REESE whose telephone number is (571) 270-5794. The examiner can normally be reached on M_F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RTR

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
Unit 3657